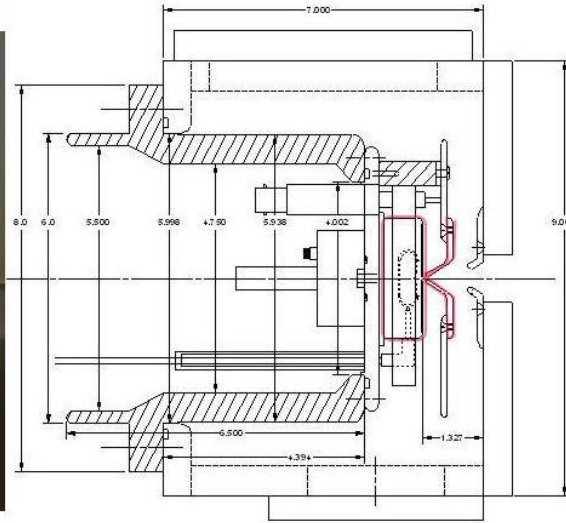
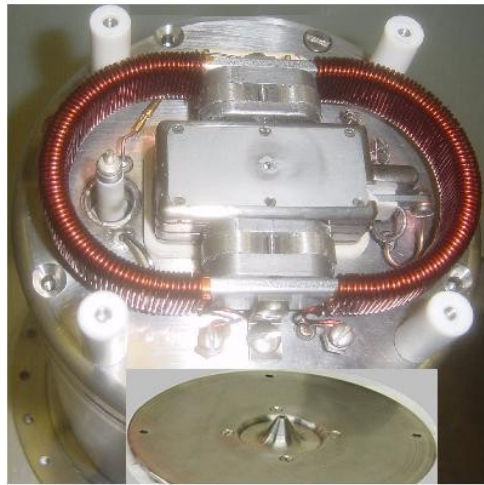


# Pre-injector Upgrade Updates (10 Nov – 01 Dec 2010)

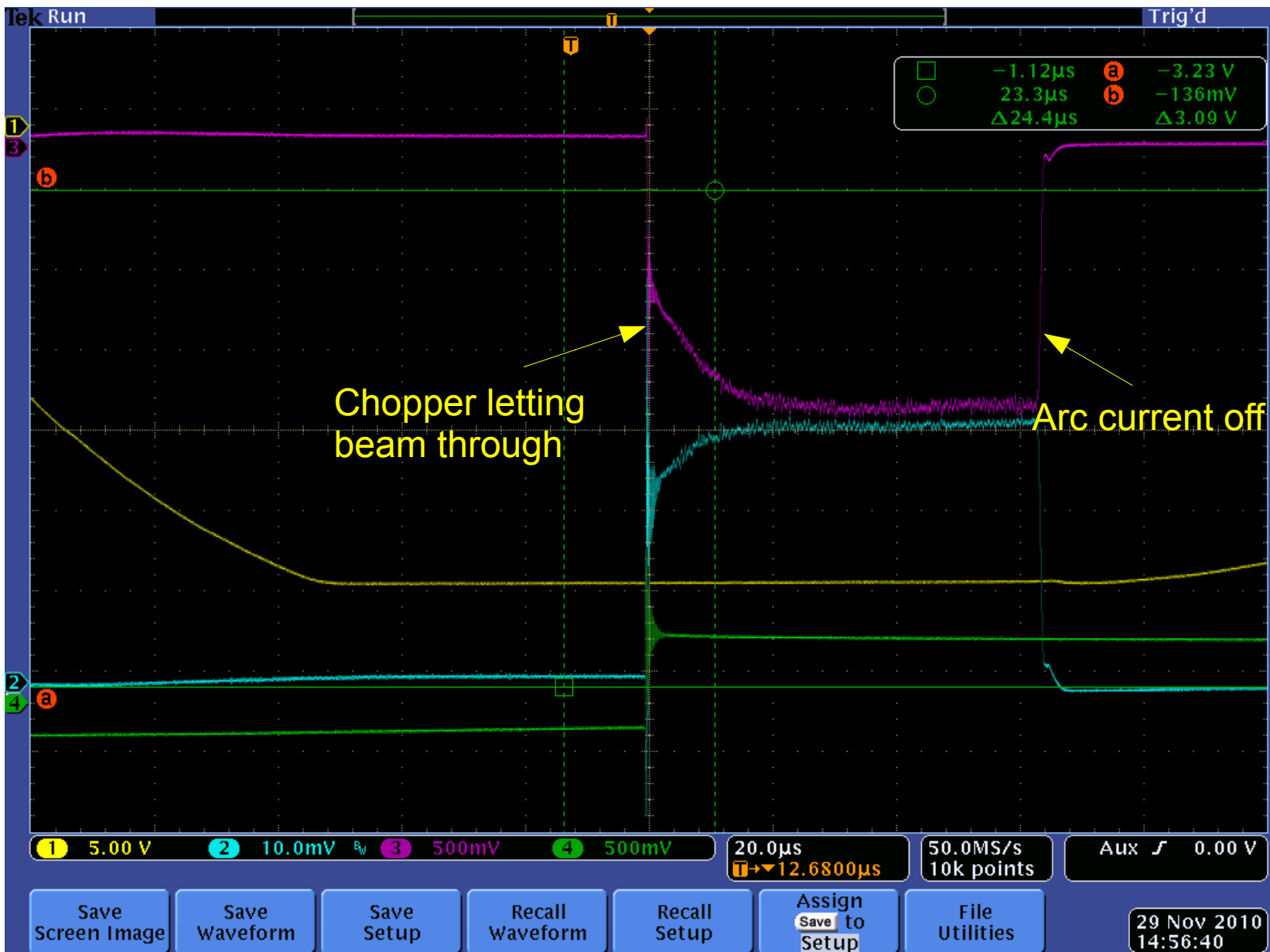
C.Y. Tan  
01 Dec 2010

# Source Status



Device	Status	Comments
Source	Drawings being made	Cube is procured.
Einzel lens pulser	Works	First test of Einzel lens as chopper successful

# Chopper Signals



Magenta:  
Faraday cup

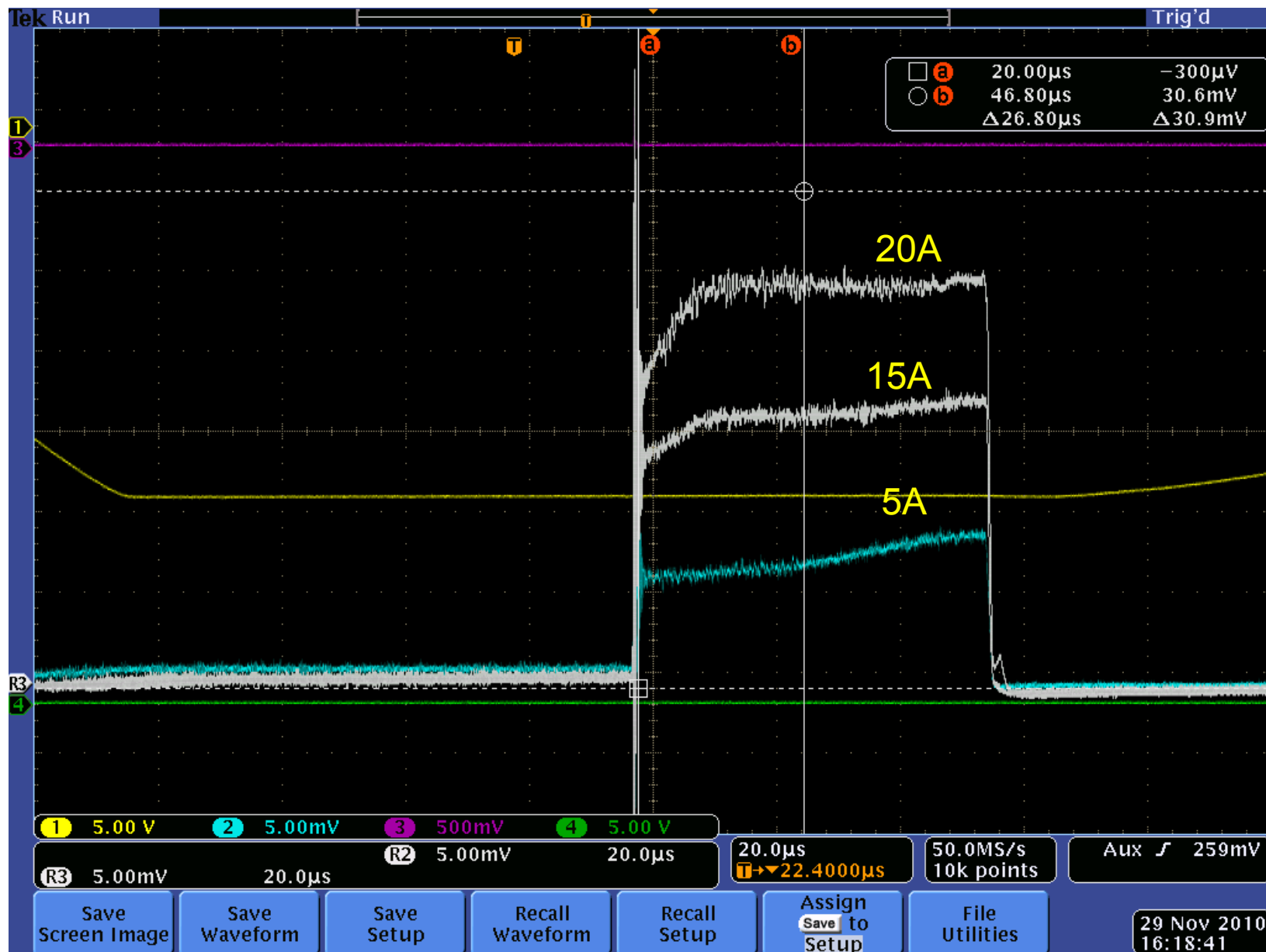
Cyan: toroid

Yellow:  
Extractor  
voltage

Green: chopper  
pulser

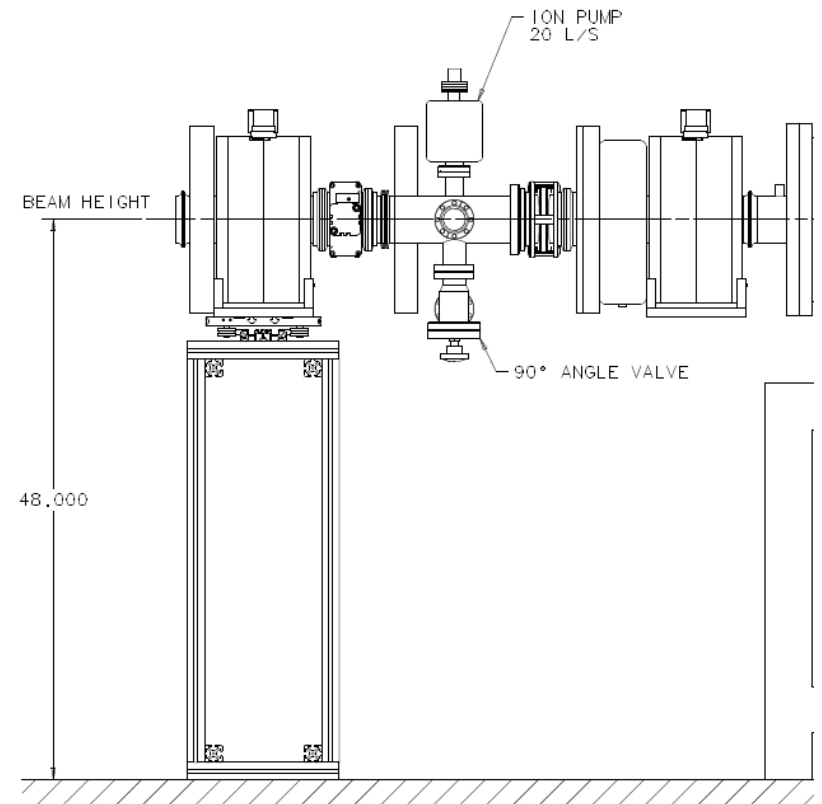
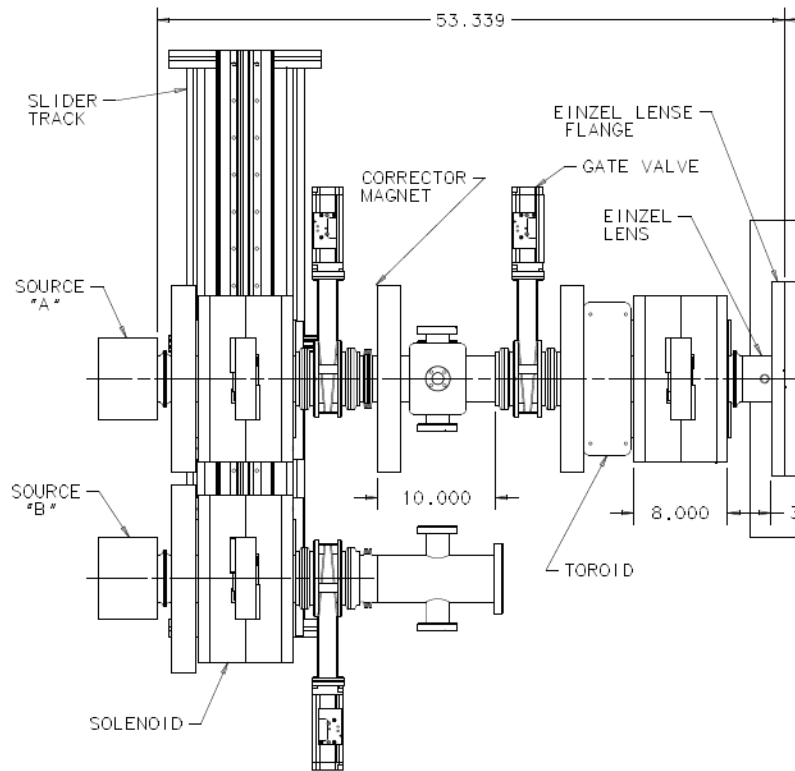
16 averages

# Scraping from space charge blow up



Labels are Arc  
currents not  
beam current

# LEBT Status



## Status

## Comments

Bdl=186.5 gauss inches

2 bids

Solenoids

Winding to start this week

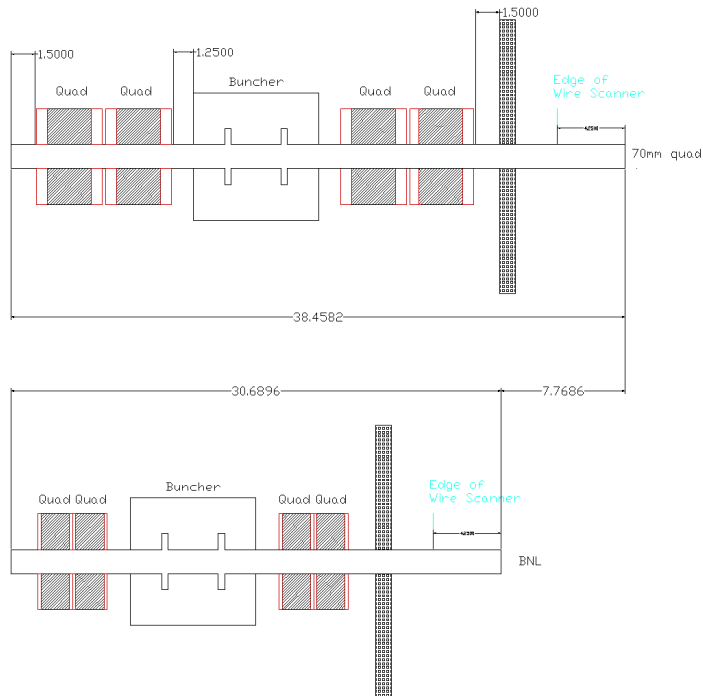
Toroids

Bill is still deciding

Einzel lens crowbar circuit

Must be done before HINS gets their source back

# MEBT Status



FNAL style

BNL style

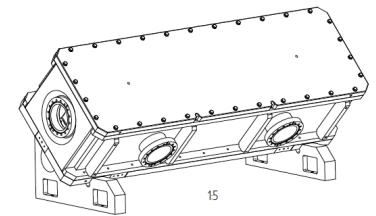
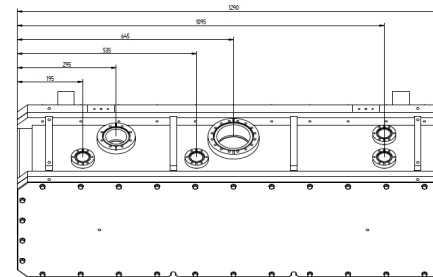
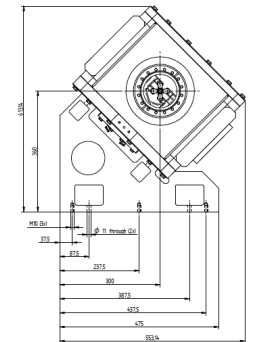
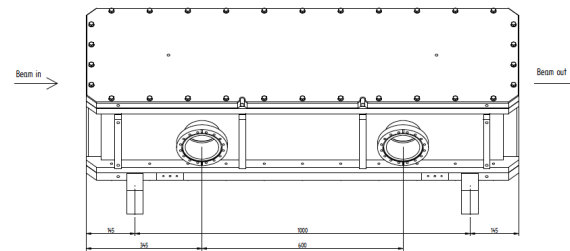
Device	Status	Comments
Quads	New design with FNAL quads and BNL quads as doublets.	Capture efficiency within 5% between FNAL and BNL design.
Buncher	Kevin approved drawings. In building process.	Indent where flange is to reduce length by 1.5cm
Power for quads	Specs to follow	Quads being redone.
Power for buncher		Use present buncher supply in the line.
Connection to Tank	Remove large flange of Tank1	

# MEBT Quads (BNL)

- Spoke to Masahiro on 15 Nov
  - 45mm will be tested before end of the year.
  - Similar 70mm quads installed in EBIS
    - All hollow conductors
    - 5Hz, 100-200us pulse, 70T/m (~800A)
    - Temperature rise is minimal for flow rate of 1 litre/s.

# RFQ Status

- Schempp
  - Tan has reproduced Schempps Twiss params and emittances!
- PA assembly
  - Waiting for new engineer, coming on 01/01/11

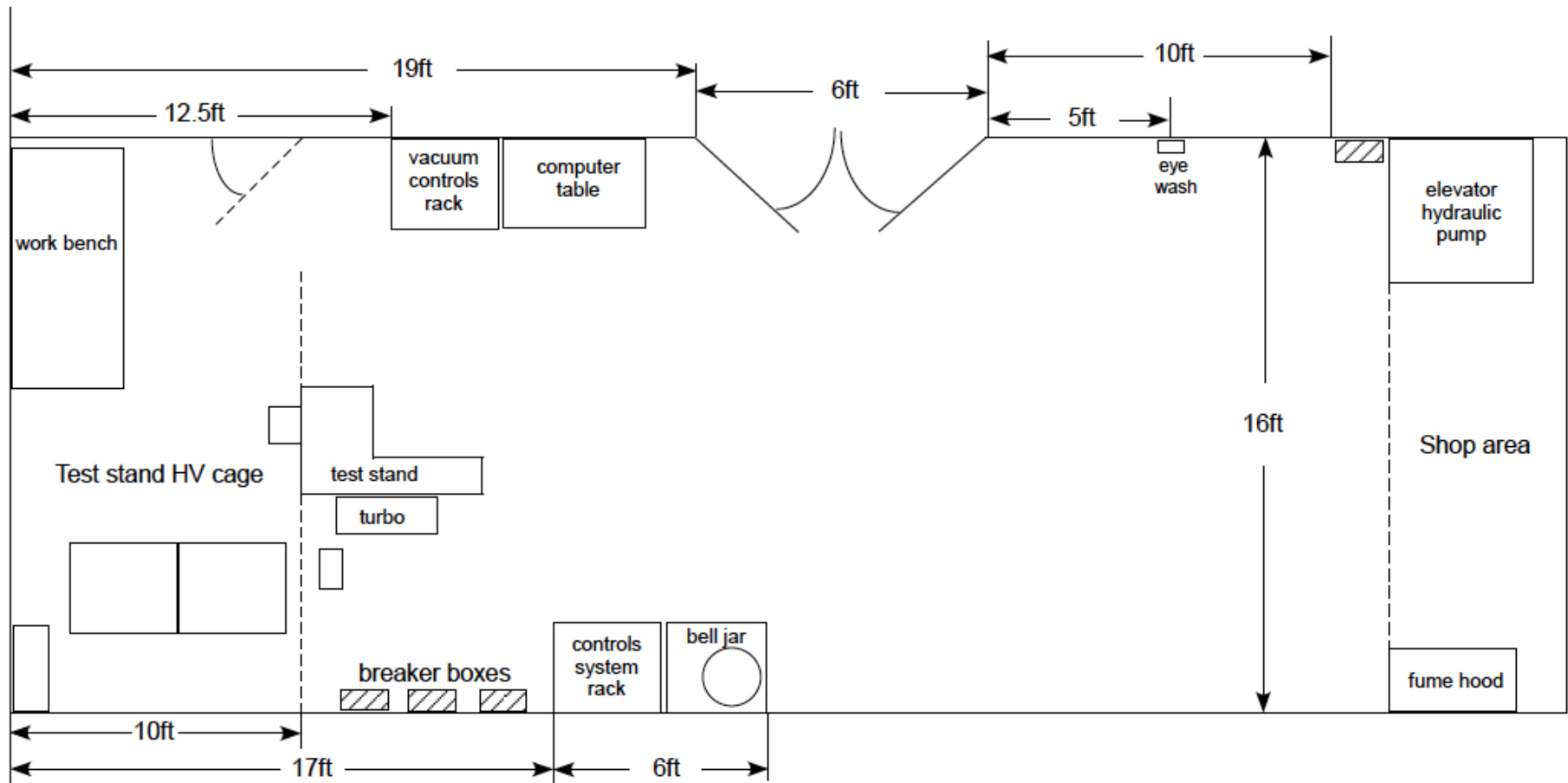


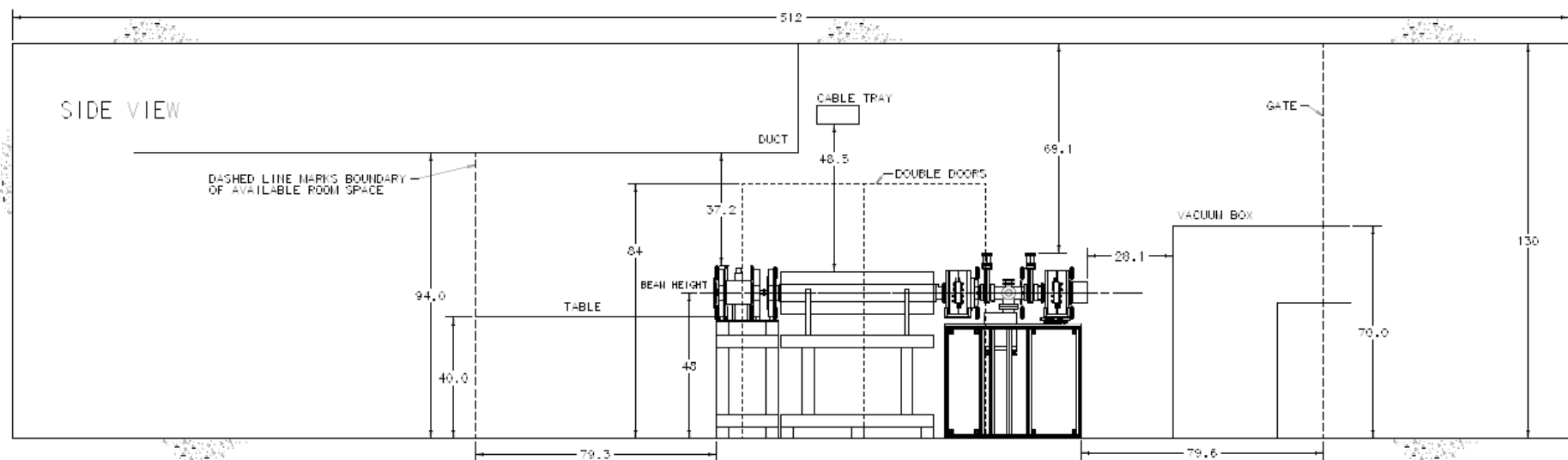
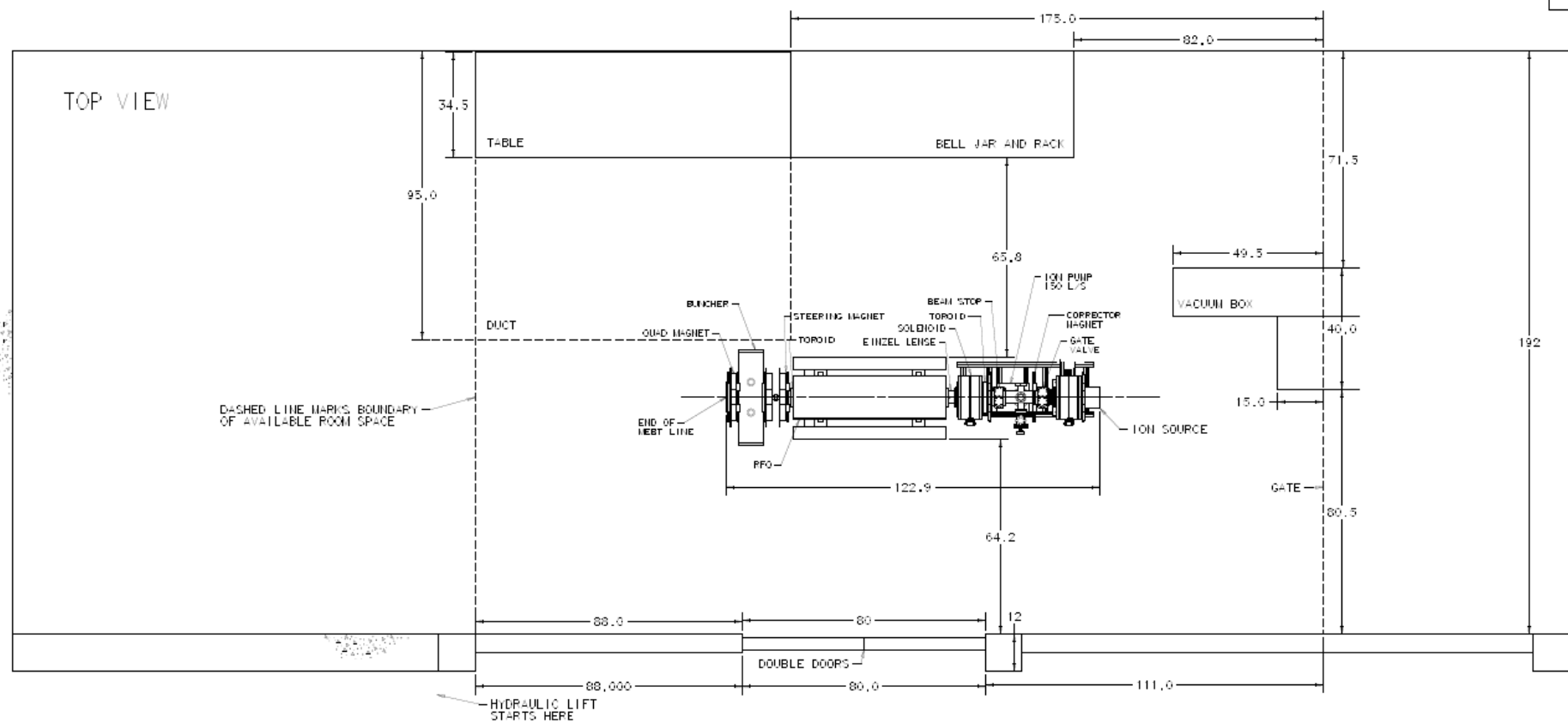


# Test Stand

- Room has been cleaned up.
  - Beam line layout in progress
    - Water – Bob Slazak
    - Electrical – Jim Ranson
- Need to test LEBT before RFQ connection
  - Wires, toroids at the end of the LEBT, same position as the RFQ.
- Design diagnostic line.
- Drawings from Schempp are sufficient to build table.

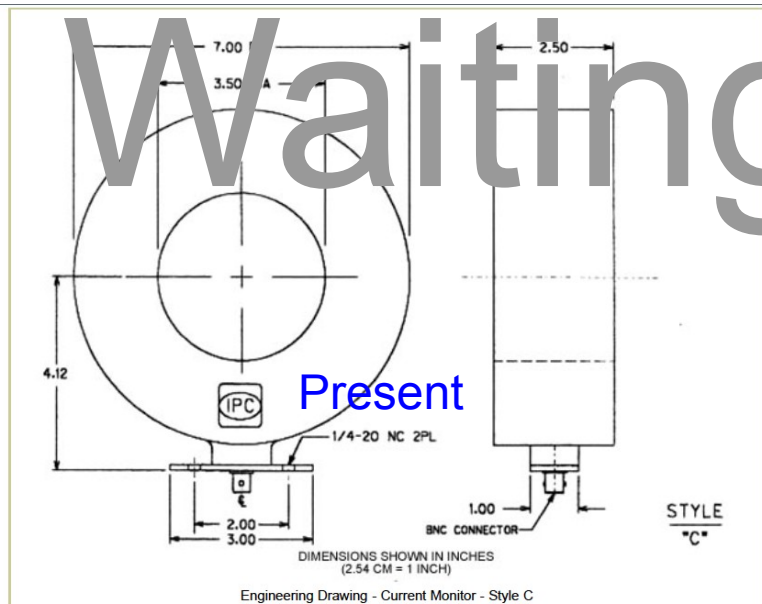
# Test Area





# Instrumentation

- Toroids clamp on
  - 1.5" over 3" flange toroids (7810)



## AC Applications

Model Number	Output Sensitivity	Hole Dia.	Max. Peak Current	Max. RMS Current	Low Frequency 3 dB Point	High Frequency 3 dB Point	Saturation Peak A/Hz
	Volts/Amp	inch	kA	A	Hz	MHz	As
CM-100-C	1	3.5	0.5	30	30	20	0.08

Model Number	Output Sensitivity	Hole Diameter	Max. Peak Current	Droop	Usable Risetime	Saturation No Bias	Saturation With Bias
	Volts/ Amp	inch	kA	%/ms	Nano-seconds	As	As
CM-100-C	1	3.5	0.5	20	17.5	0.008	0.025

- sensitivity 0.1V/A c.f. 1V/A
- Rise time 50 ns (same as non clamp on, 2x slower than present)
- Length 1.25"
- 6" toroids (7655)
  - 0.1V/A
  - Rise time 100 ns.
  - Length 1.5" (2.5x or 3x shorter than non clamp on)

# Safety

- When can the beam line layout in test area be done?

# RFQ reminders

- Schempp is vendor
  - Make sure that the vanes are cleaned! See ISIS email.
    - Some cleaning details supplied by ISIS.
  - Review and verify on site mechanical design and construction (already in contract).

# Controls

